REMARKS

Reconsideration and allowance of this application in view of the following remarks are respectfully requested. Claims 1-18 are currently pending in this application and have been amended for clarity without the intention of narrowing their scope in anyway.

Claims 1-3 and 9-11 were rejected under 35 U.S.C. § 103 (a) over Ramesh et al. (U.S. Patent No. 5,668,820; hereafter "Ramesh") in view of Anno et al. (EP0660558A2; hereafter "Anno"). Claims 4, 7 and 12-16 were rejected under 35 U.S.C. § 103 (a) over Ramesh in view of Anno and further in view of Kuroda et al. (U.S. Patent No. 5,432,800; hereafter "Kuroda"). Claims 5-6, 8 and 17-18 were rejected under 35 U.S.C. § 103 (a) over Ramesh in view of Anno and further in view of Bach et al. (U.S. Patent No. 5,475,686; hereafter "Bach"). Applicants respectfully traverse every rejection because the applied combinations of (a) Ramesh and Anno; (b) Ramesh, Anno and Kuroda and (c) Ramesh, Anno and Bach, do not teach or suggest every feature recited in the rejected claims.

For example, none of the references, whether analyzed alone or in combination, teach or suggest a data transmission method comprising, among other elements, grouping bits to be transmitted in blocks having the minimum size of 288 bits, or 290 bits, as recited in independent claims 1 and 3, respectively. Further, none of the references, whether analyzed alone or in combination, teach or suggest a data transmission method comprising, among other elements, puncturing the bits obtained by deleting bits from each block so that blocks containing no more than 456 bits will be obtained, as recited in independent claim 1, or puncturing the coded bits obtained by deleting 132 bits from each block, as recited in independent claim 3.

Ramesh merely teaches punctured convolution coding and puncturing in connection with data blocks of finite size, e.g., k-tuples or n-tuples, to improve bit error rate while maintaining the same data rate. However, the claimed methods recited in independent claims

1 and 3 are directed to increasing data rate. Further, Ramesh does not teach data blocks, e.g., k-tuples or n-tuples, of the claimed finite size, e.g. no more than 456 bits, or 588 bits. Therefore, Ramesh does not teach or suggest puncturing the bits obtained by deleting bits from each data block so that the data blocks obtained will contain no more than 456 bits, as recited in independent claim 1, or puncturing the coded bits obtained by deleting 132 bits from each block, as recited in independent claim 3. Additionally, Ramesh does not teach or suggest grouping bits to be transmitted in blocks having a minimum size of 288 bits, as recited in independent claim 1, or having a size of 290 bits, as recited in independent claim 3.

The Office Action relied on Anno for its teachings of GSM convolutional coding to remedy the deficiencies of Ramesh to provide an interleaving process. However, Anno merely teaches a data block having a size of 456 bits, and fails to remedy the deficiencies of Ramesh because Anno fails to teach or suggest blocks having a minimum size of 288 bits, as recited in claim 1, or blocks having a size of 290 bits, as recited in claim 3. Thus, the applied combination of Ramesh and Anno does not teach or suggest all of the features of independent claim 1 and independent claim 3 (and dependent claims 9-11).

Neither Kuroda nor Bach, whether analyzed alone or in combination, would remedy the deficiencies of the applied combination of Ramesh and Anno because Kuroda and Bach do not teach or suggest blocks having a minimum size of 288 bits, as recited in claim 1, or blocks having a size of 290 bits, as recited in claim 3. As such, the applied combinations of Ramesh, Anno and Kuroda and/or Bach do not teach or suggest all of the features of independent claim 1 (and its dependent claims 2 and 4-18) and independent claim 3 (and its dependent claims 4-18).

Accordingly, independent claim 1 (and its dependent claims 2 and 4-18) and independent claim 3 (and its dependent claims 4-18) are allowable. Reconsideration and withdrawal of the rejections of claims 1-18 are respectfully requested.

To establish the *prima facie* case of obviousness, all claim limitations must be taught or suggested by the prior art and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill on the art, to modify the references or to combine reference teachings. Applicants further traverse each rejection because there is no suggestion or motivation to modify the applied references or to combine their teachings.

As explained above, the Office Action speculated that one of ordinary skill in the art would have been motivated to combine the teachings of Ramesh and Anno to provide an interleaving process in Ramesh. However, Applicants traverse the rejection of claims 1, 3 and 9-11 because one of ordinary skill in the art would not have been motivated to modify the teachings of Ramesh in accordance with Anno. The Office Action's identified motivation to combine is merely a product of impermissible hindsight analysis.

Anno is merely directed to an interleaving method, but there is no suggestion or motivation in Anno to combine this interleaving method with the punctured convolutional coding system and method of Ramesh, nor would one skilled in the art be motivated to do so.

Therefore, there is not sufficient motivation or suggestion to modify the teachings of Ramesh with the teachings of Anno to support a valid rejection under 35 U.S.C. § 103.

Accordingly, independent claim 1 (and its dependent claims 2 and 4-18) and independent claim 3 (and its dependent claims 4-18) are allowable. Reconsideration and withdrawal of the rejections of claims 1-18 are respectfully requested.

For at least the foregoing reasons, the Applicants submit that the claims are in condition for allowance. Timely notice to that effect is therefore respectfully requested.

Should the Examiner believe that anything further is desirable to place the application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached Appendix is captioned **"Version with markings to show changes made"**.

Respectfully submitted,

PILLSBURY WINTHROP LLP

By

Dale S. Lazar
Reg. No. 28,872
Tel. No.: (703) 905-2126
Fax No.: (703) 905-2500

DSL/JMS
PO Box 10500
McLean, Virginia 22102
(703) 905-2000

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 1-18 as follows:

1. (Amended) A data transmission method in a digital cellular radio network, the method comprising: [the step of]

channel coding [the] information to be transferred for transmission, [characterized in that] the channel coding [comprises] comprising

grouping bits to be transmitted in blocks having [the] a minimum size of 288 bits[,];

carrying out convolutional coding for said blocks with a code rate of ½ by using GSM convolutional coding polynomes[,]; and

puncturing the bits obtained, the puncturing including [by] deleting bits from each block so that blocks containing no more than 456 bits will be obtained.

2. (Amended) A method as claimed in claim 1, [characterized in that] wherein the block size after the convolutional coding is 584 bits, and [that] the coded blocks obtained are punctured by deleting 128 bits from each block.

3. (Amended) A data transmission method in a digital cellular radio network, the method comprising: [the step of]

channel coding [the] information to be transferred for transmission, [characterized in that] the channel coding [comprises] comprising

grouping bits to be transmitted into blocks having the size of 290 bits[,];

inserting 4 tail bits [to] into the blocks[,];

carrying out convolutional coding for said blocks with a ½ code rate by employing GSM convolutional polynomes so that after the coding the block size is 588 bits[,]; and

puncturing the coded bits obtained by deleting 132 bits from each block.

4. (Amended) A method as claimed in claim 1 or 3, [characterized in that]

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further comprising transferring the information to be transmitted [is transferred] in [the] a transfer system by generating one frame from two transcoding frames by using a part of synchronization and control bit positions of the latter frame in the information transfer.

5. (Amended) A method as claimed in claim 1 or 3, [characterized in that] further comprising transferring the information to be transmitted [is transferred] in [the] a transfer system by generating a transcoding frame [whose] having a plurality of data octets, the first two data octets [form] forming a synchronization pattern that consists of zeros, and said transcoding frame containing control bits and at least 288 bits of information to be transmitted.

6. (Amended) A method as claimed in claim 5, [characterized in that those] further comprising employing bits of the frame that have a known value [are used] for synchronizing of the transcoding frame.

7. (Amended) A method as claimed in claim 5, [characterized in that] further comprising calculating a short checksum [is calculated] for some of the data octets used for transferring the information to be transmitted, [and that the] transferring a cyclic redundancy check (CRC) value [thus] obtained [is transferred] by using spare control bits, and employing [that] the CRC value is [utilized] in synchronizing of the transcoding frame.

8. (Amended) A method as claimed in claim 5, [characterized in that] further comprising modifying the information to be transferred [in modified] so that the bit sequences comprised by the information differ from the synchronization sequences.

9. (Amended) A method as claimed in claim 1 or 3, [characterized in that] further comprising inverting each information bit [is inverted] prior to the transfer and [deinverted] deinverting each information bit after the transfer.

10. (Amended) A method as claimed in claim 1 or 3, [characterized in that] further comprising transferring the information to be transmitted [is transferred] in [the] a transfer system by generating a transfer frame whose total length is 640 bits and the information transferred by which is applied to a channel coder as two blocks with the length

of 290 bits.

11. (Amended) A method as claimed in claim 10, [characterized in that] further comprising inserting an identifier [is inserted to] into [both of] the two blocks [that indicates] indicating whether [the] a first block or [the] a second block of the frame is in question.

12. (Twice Amended) A method as claimed in claim 11, wherein [characterized in that] the [block] identifier is in a predetermined position in [the] each block, and [that the identifier of the second block is formed by] further comprising inverting the identifier of the first block to form the identifier of the second block.

13. (Amended) A method as claimed in claim 12, [characterized in that] wherein [the] first bits [(1, 2, 3, 4)] of both [the] frames are [used for] employed in transferring supplementary information over the air interface, and wherein the first bits are supplementary information bits.

14. (Amended) A method as claimed in claim 13, [characterized in that] wherein the supplementary information bits are used for [signalling] signaling discontinuous transmission.

15. (Amended) A method as claimed in claim 13, [characterized in that] wherein the supplementary information bits are used for transmission of synchronization information.

16. (Amended) A method as claimed in claim 14, [characterized in that] further comprising replacing the bit indicating discontinuous transmission in the first block of the frame [is replaced] at the base station [by] with a fixed-value bit prior to channel coding, [and that] wherein the bit to be transmitted in the same position in the latter frame has an inverse value.

17. (Amended) A method as claimed in claim 4, [characterized in that] further comprising generating the transfer frame [is generated] at a network interworking unit [(1000)].

18. (Amended) A method as claimed in claim 17, [characterized in that] wherein the transfer frame comprises a radio link protocol frame.

END OF APPENDIX